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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,787	06/26/2003	Mihce Lee	033808-003	3464

21839 7590 08/04/2006

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

KOWALEWSKI, FILIP A

ART UNIT PAPER NUMBER

3736

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/603,787	Applicant(s) LEE ET AL.	
	Examiner Filip A. Kowalewski	Art Unit 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/20/06 10/17/03 5/10/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 10, 17, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "contents", in claim 4 – line 2, claim 10 – line 4, claim 17 – line 2, and claim 32 – line 2 is not defined explicitly in the specification or implicitly through its usage. Thus, the term renders the claim indefinite since one of ordinary skill in the art would not be able to ascertain the scope of the claim. Furthermore, the Examiner has interpreted the claim in a manner that would render the prior art applicable. *Ex parte Ionescu*, 222 USPQ 537 (Bd. App. 1984). Claims 5, 18, 24, 25, 26, 27, 28, 29, 30, and 31 are rejected due to their dependence on the claims rejected above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13, 15-21, and 23-32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,266,070 to Hagiwara et al. (hereinafter Hagiwara).

Hagiwara discloses the following claim limitations:

1. An apparatus (Fig. 2 – 10 Apparatus) for inducing emotions based on detection of biosignals from a body of a user and on emotion induction protocols for selectively controlling visual, auditory, olfactory and tactile stimuli, comprising:

an emotion induction module (Fig. 2 – 19 Controller) for selecting an emotion induction protocol capable of inducing a desired emotion selected by the user, extracting one or more bioparameters from the biosignals, and changing the emotion induction protocol depending on increase/decrease patterns of the respective extracted bioparameters so as to induce the emotion;

a biostimulation module (Fig. 2 – 11 Relaxation Refreshment Chair) for outputting physical signals for applying the stimuli to the user's body based on the selected emotion induction protocol; and

a biosignal measurement module (Fig. 2 – 16 Sensor) for detecting one or more biosignals from the user's body and outputting them to the emotion induction module before and after the output of the physical signals from the biostimulation module.

2. The apparatus as claimed in claim 1, wherein the emotion includes any one of pleasure (Col. 2 – Ln. 29-34), sadness, anger, fear, disgust and surprise.

3. The apparatus as claimed in claim 1, wherein the emotion induction module comprises

a bioparameter change model storage unit (Fig. –131 Control Means) in which change models for the respective bioparameters by emotional states are stored, an emotion induction protocol storage unit (Fig. –131 Control Means) in which emotion induction protocols capable of inducing physiological signals for the emotional states are stored, and

an emotion induction control unit (Fig. –131 Control Means) for comparing the increase/decrease patterns of the respective bioparameters extracted from the biosignals with the bioparameter change models and changing the emotion induction protocols depending on comparison results.

4. The apparatus as claimed in claim 3, wherein the emotion induction protocols are protocols configured by combining the contents capable of inducing cognitive action of the central nervous system, and conditions of illumination, fragrance and temperature/humidity capable of inducing physiological action of the autonomic nervous system (Col. 2 – Ln. 35-64).

5. The apparatus as claimed in claim 4, wherein the emotion induction protocol is configured in such a manner that the contents and the conditions of illumination, fragrance and temperature/humidity are graded according to the respective

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bioparameters into various levels in order of capability to induce the increase of the bioparameters (Col. 2 – Ln. 60-64).

6. The apparatus as claimed in claim 3, wherein the emotion induction control unit compares the increase/decrease patterns of the respective bioparameters extracted from the biosignals with the bioparameter change models, extracts deviations of the increase/decrease patterns of the respective bioparameters from the bioparameter change models, and checks whether the user has reached a desired emotional state based on the deviations of the increase/decrease patterns of the respective bioparameters (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-5).

7. The apparatus as claimed in claim 3, wherein if an increase/decrease pattern of only one bioparameter among the bioparameters extracted from the biosignals does not conform to the bioparameter change model, the emotion induction control unit changes the level of the unconformable bioparameter in the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-5).

8. The apparatus as claimed in claim 3, wherein if increase/decrease patterns of a plurality of bioparameters among the bioparameters extracted from the biosignals do not conform to the bioparameter change models, the emotion induction control unit changes the levels of bioparameters, which are selected according to priorities of changes in the bioparameters, in the emotion induction protocol (Col. 8 – Ln. 67 & Col.

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9 – Ln. 1-24).

9. The apparatus as claimed in claim 8, wherein the priorities of changes in the bioparameters are set in order of induction facilitation of the bioparameters for a relevant emotion induction (Col. 9 – Ln. 41-54)

10. The apparatus as claimed in claim 3, wherein if increase/decrease patterns of all the bioparameters extracted from the biosignals do not conform to the bioparameter change models, the emotion induction control unit changes the contents of the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

11. The apparatus as claimed in claim 1, wherein the physical signals outputted from the biostimulation module stimulate at least one of the visual, auditory, olfactory and tactile senses (Col. 2 – Ln. 35-64).

12. The apparatus as claimed in claim 1, wherein the biosignal measurement module comprises a sensor unit for detecting one or more biosignals from the user's body, and the sensor unit includes a heartbeat detection sensor for detecting a heartbeat biosignal (Col. 8 – Ln. 64-67) from the user's body and a skin resistance sensor for measuring skin resistance of the user's body (Col. 8 – Ln. 9-16).

13. The apparatus as claimed in claim 12, wherein bioparameters for the number of

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heartbeats and a variation of the heartbeat are extracted from the heartbeat biosignal (Col. 8 – Ln. 64-67), and a bioparameter for the skin resistance is extracted from a skin resistance biosignal (Col. 8 – Ln. 9-16).

15. A method for inducing emotions based on emotion induction protocols capable of selectively controlling visual, auditory, olfactory and tactile stimuli, comprising the steps of:

- selecting a desired emotion by a user (Col. 7 – Ln. 58-59);

- detecting one or more biosignals from the user's body and extracting one or more bioparameters from the detected biosignals (Col. 7 – Ln. 55-57) ;

- outputting physical signals for stimulating the user's body based on an emotion induction protocol capable of inducing the selected emotion (Col. 7 – Ln. 59-67 & Col. 8 – Ln. 1-8);

- after the output of the physical signals, detecting one or more biosignals from the user's body and extracting one or more bioparameters from the detected biosignals; and

- inducing the emotion by changing the emotion induction protocol based on increase/decrease patterns of the bioparameters extracted from the biosignals (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

16. The method as claimed in claim 15, wherein the emotion includes any one of pleasure (Col. 2 – Ln. 29-34), sadness, anger, fear, disgust and surprise.

17. The method as claimed in claim 15, wherein the emotion induction protocols are protocols configured by combining the contents capable of inducing cognitive action of the central nervous system, and conditions of illumination, fragrance and temperature/humidity capable of inducing physiological action of the autonomic nervous system (Col. 2 – Ln. 35-64).

18. The method as claimed in claim 17, wherein the emotion induction protocol is configured in such a manner that the contents and conditions of illumination, fragrance and temperature/humidity are graded according to the respective bioparameters into various levels in order of capability to induce the increase of the bioparameters (Col. 2 – Ln. 35-64).

19. The method as claimed in claim 15, wherein the physical signals stimulate at least one of the visual, auditory, olfactory and tactile senses (Col. 2 – Ln. 35-64).

20. The method as claimed in claim 15, wherein the biosignals include biosignals for heartbeat (Col. 8 – Ln. 64-67) and skin resistance (Col. 8 – Ln. 9-16) of the user's body.

21. The method as claimed in claim 20, wherein bioparameters for the number of heartbeats and a variation of the heartbeat are extracted from the heartbeat biosignal (Col. 8 – Ln. 64-67), and a bioparameter for the skin resistance is extracted from the

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skin resistance biosignal (Col. 8 – Ln. 9-16).

23. The method as claimed in claim 15, wherein the step of inducing the emotion further comprises the steps of comparing the increase/decrease patterns of the extracted respective bioparameters with the respective bioparameter change models, extracting deviations of the increase/decrease patterns of the respective bioparameters from the bioparameter change models, and checking whether the user has reached a desired emotional state based on the deviations of the increase/decrease patterns of the respective bioparameters (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

24. The method as claimed in claim 18, further comprising the step of, if the user has not reached a desired emotional state, changing the contents or level of the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

25. The method as claimed in claim 24, wherein the step of changing the contents or level of the emotion induction protocol comprises the step of, if an increase/decrease pattern of only one bioparameter among the bioparameters extracted from the biosignals does not conform to the bioparameter change model, changing the level of the unconformable bioparameter in the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

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26. The method as claimed in claim 24, wherein the step of changing the contents or level of the emotion induction protocol comprises the step of, if increase/decrease patterns of a plurality of bioparameters among the bioparameters extracted from the biosignals do not conform to the bioparameter change models, changing the levels of bioparameters, which are selected according to priorities of changes in the bioparameters, in the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

27. The method as claimed in claim 26, wherein the priorities of changes in the bioparameters are set in order of induction facilitation of the bioparameters for a relevant emotion induction (Col. 9 – Ln. 41-54).

28. The method as claimed in claim 24, wherein the step of changing the contents or level of the emotion induction protocol comprises the step of, if increase/decrease patterns of all the extracted bioparameters do not conform to the bioparameter change models, changing the contents of the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

29. The apparatus as claimed in claim 5, wherein if an increase/decrease pattern of only one bioparameter among the bioparameters extracted from the biosignals does not conform to the bioparameter change model, the emotion induction control unit changes the level of the unconformable bioparameter in the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

30. The apparatus as claimed in claim 5, wherein if increase/decrease patterns of a plurality of bioparameters among the bioparameters extracted from the biosignals do not conform to the bioparameter change models, the emotion induction control unit changes the levels of bioparameters, which are selected according to priorities of changes in the bioparameters, in the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

31. The apparatus as claimed in claim 5, wherein if increase/decrease patterns of all the bioparameters extracted from the biosignals do not conform to the bioparameter change models, the emotion induction control unit changes the contents of the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

32. The method as claimed in claim 23, further comprising the step of, if the user has not reached a desired emotional state, changing the contents or level of the emotion induction protocol (Col. 8 – Ln. 67 & Col. 9 – Ln. 1-24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara as applied to claims 1 and 15 above, in view of U.S. Patent No. 4,909,260 to Salem et al. (hereinafter Salem).

In regard to claims 14 and 22, Hagiwara discloses an apparatus for inducing emotions comprising a biosignal measurement module, but does not explicitly disclose that the module comprises an amplifier, filter, analog/digital converter, and radio transmitter. However, Salem, a reference in the analogous art of biosignal monitoring, discloses an biosignal acquisition and measuring device comprising an amplifier (Salem, Fig. 17 – 224 AMP), filter (Col. 2 – Ln. 35-40), analog to digital converter (Col. 10 – Ln. 32-34), and a radio transmitter (Fig. 17 – 184 radio transmitter). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the apparatus disclosed in Hagiwara to include an amplifier, filter, analog/digital converter, and radio transmitter, since an amplifier allows appropriate signal gain necessary for signal processing, a filter allows separation of heart signals from respiratory signals (Col. 2 – Ln. 35-40), an analog to digital converter allows more precise signal processing by the microprocessor (Col. 10 – Ln. 25-37), and radio transmitter allows wireless communication (Col. 4 – Ln. 22-24).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip A. Kowalewski whose telephone number is 571-272-5668. The examiner can normally be reached on Monday - Friday: 8am - 4pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FAK
July 3, 2006



Michael Astorino